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AUTHORITY

AGO ltr dtd 29 Apr 1980

DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO
AGAM-P (M) (2 Feb 68) FOR OT RD-674009 6 February 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 62d Engineer Battalion, Period Ending 31 October 1967

TO: SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation by USACDC in accordance with paragraph 6f, AR 1-19 and by USCONARC in accordance with paragraph 6c and d, AR 1-19. Evaluations and corrective actions should be reported to ACSFOR OT within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 62D ENGINEER BATTALION
APO 96491

EGBC-3 31 October 1967

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

THRU: Commanding Officer
159th Engineer Group
APO 96491

Commanding General
20th Engineer Brigade
APO 96491

Commanding General
USA Engineer Command Vietnam (Prov)
ATTN: AVCC-P&O
APO 96491

Commanding General
United States Army, Vietnam
ATTN: AVHGC-DH
APO 96491

Commanding General
United States Army, Pacific
ATTN: GPOP-OT
APO 96588

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR DA)
Washington, D.C. 20310

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES

1. COMMAND:

a. UNIT EMPLOYMENT: The 62d Engineer Battalion (Construction) is located in the Long Binh Complex, Republic of South Vietnam. The Battalion is commanded by LTC Robert E. Crowley.

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b. MISSION: The mission of the 62d Engineer Battalion is in accordance with the mission of a construction battalion as stated in TO&E 5-115E.

c. AREA OF RESPONSIBILITY: Responsibility for construction support includes portions of Long Binh Post, the Bien Hoa Complex, and the Saigon Military District Area.

d. ATTACHMENTS OR DETACHMENTS:

(1) The 143d Engineer Detachment HO (Concrete Mixing and Paving) is attached to the Battalion and is under the operational control of A Company. The unit is organized under TO&E 5-500C 57 w/C 22 (TO&E 300-32) with an authorized strength of 27 officer and EM.

(2) The quarry section of the Equipment Platoon, Company A, plus one cook from Company A, and one medic from Headquarters Company are attached to Company A, 92d Engineer Battalion (Construction) for quarters, rations, and operational control. The section is utilized in support of the Nom Tam Quarry.

2. PERSONNEL, ADMINISTRATION, MORALE, AND DISCIPLINE:

The Battalion is organized under the Echo Series TO&E.

The personnel strength of the 62d Engineer Battalion (Construction) and attached unit was as follows:

31 August 1967	OFF	WO	EM	TOTAL
Authorized:	32	7	893	932
Assigned:	29	7	846	882
30 September 1967				
Authorized:	32	7	893	932
Assigned:	34	7	840	881
31 October 1967				
Authorized:	32	7	893	932
Assigned:	33	7	872	912

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

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There have been 43 extensions of tours of duty in Vietnam for this reporting period. These extensions continue to provide the Battalion with well trained and experienced personnel.

The 62d Engineer Battalion (Construction)received an average of 71 Rest and Relaxation leaves each month. 92% of these leaves were utilized by the Battalion. The Battalion received one (1) R&R leave to Vung Tau each month.

The Battalion has an incentive awards program whereby the outstanding Soldier, Driver, Mechanic, and Equipment Operator of the month are given priority on the in-country R&R allocations. An additional three (3) allocations per month could be effectively utilized for this purpose.

Morale within the Battalion remained high during the reporting period. Several special floor shows provided by the Sundry Fund, the showing of free movies six nights per week, and a recreational program supplemented with half a day off during the week for each EM have sustained a high espirit de corps. Command emphasis has been given to good working and living conditions. The Battalion has also initiated Best Platoon of the Week, Best Company Mess of the Month, and Best Company of the Month Programs. These competitions have enhanced unit integrity.

The number of disciplinary actions increased from those of the last reporting period. The Battalion had nine (9) Special Courts Martials, four (4) Summary Courts Martials, and 67 Article 15's during this period. Command emphasis at the lowest unit level is being placed on continued orientation of all personnel.

3. INTELLIGENCE AND COUNTERINTELLIGENCE:

The combat intelligence functions of the Battalion have been relatively minor due to the primary emphasis on construction in relatively secure areas. Battalion intelligence has been restructed primarilary to analysis of project sites to improve design and construction. Intelligence information is obtained on a daily basis from Second Field Forces Vietnam (II FFV) SITREP.

Reconnaissances were made during this reporting period of highways to be upgraded for future lines of communication (LOC) prpjects. These included the Saigon By-Pass, QL 4 from Saigon to My Tho, and QL 1 from Saigon to Cu Chi. These reconnaissances were made to determine the construction effort required.

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

4. OPERATIONS AND TRAINING:

a. Combat Support:

(1) This Battalion supported the 92d Engineer Battalion (Construction) with ten (10) 5 ton dump trucks for the period 25 October 1967 through 30 October 1967 and supported the 46th Engineer Battalion (Construction) with thirteen (13) 5 ton dump trucks for the period 27 October 1967 through 31 October 1967.

(2) This unit received a directive on 19 July 1967 to make and stock 15 foot and 20 foot precast reinforced concrete bridge beams. These beams are to be used in support of LOC upgrading by Engineer Groups in Vietnam. The precasting will continue indefinitely in order to fulfill all commitments for LOC projects and for tactical support.

b. Training: Training was conducted during this period on Sunday mornings. Mandatory DA and USARV subject were presented during these two (2) hour training periods.

c. Construction Operations:

(1) During this reporting period the Battalion was actively engaged in construction activities 86 days.

(2) Weather throughout this reporting period has been generally fair to poor. The following amounts of precipitation were recorded during the period: August - 13.5 inches, September - 12.1 inches, October - 8.9 inches. The weather considerably slowed down the horizontal construction but only caused minor delays in vertical construction.

d. Projects and Related Activities:

(1) Projects completed this period:

(a) Field Evaluation of Essoprime was completed 30 August 1967. The test consisted of evaluation of fifteen (15) test strips on various types of soil. Essoprime was found effective on all but sandy soils.

(b) MACV Bunkers and Revetments, Group Directive 159-146. Project included shipment of sandbags and laterite-filled 55 gallon drums to Saigon. A total of 68,950 sandbags and 9,186 drums were shipped. Project was completed on 8 September 1967.

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

7.

(c) MER for 524th MI Detachment, Group Directive 159-159. Project was completed on 20 September 1967. Project included three (3) laterite pads and a 400 foot MACV Standard Roadway.

(d) Water Processing, Storage, and Distribution, Group Directive 159-80. Project was completed 23 August 1967. The project consisted of construction of a tower, fill stand, and 500 BBL storage tank.

(e) Water Processing, Storage, and Distribution, Group Directive 159-81. Project was completed 18 October 1967. This project included construction of a tower, fill stand, and 1000 BBL storage tank.

(f) Map Depot Expansion, Command Directive 43-249-10-T-MA. Project was completed 8 August 1967. The project consisted of constructing two (2) 20'x140' extensions to an existing fabricated metal storage warehouse.

(g) USAID Generator Site, Command Directive 73-211-01-T-MA. Project was completed 15 August 1967. This project consisted of the construction of five (5) 10'x60' generator pads and security fencing for the Khanh Hoi Power Plant in Saigon.

(2) The following projects are under construction during during this reporting period in the Long Binh and Saigon Military District Areas:

(a) Laterite Pit Operation. During this reporting period 485,940 cubic yards of laterite were issued to units in the Long Binh Area.

(b) 55 Gallon Drums Filled with Laterite to be used for Airfield Revetments, Group Directive 159-133. 2,544 drums have been shipped to date.

(c) Mess Hall Construction, Group Directive 159-78, W/Ch. Project is 99% complete. The 750 man mess hall at 93d Evac Hospital will be completed upon arrival of electrical supplies.

(d) Prefabrication Operations, Group Directive 159-88. This project consists of prefabrication of water and guard towers in support of other units. Project is continuous.

(e) Precast Concrete Bridge Beams, Group Directive 159-138. This project consists of construction and pouring concrete beams and curbs in 15 foot and 20 foot lengths. Project is continuous.

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

8

(f) MER for 39th Base Post Office, Group Directive 159-147. Project consisted of constructing a road network, one (1) 70'x140' pad, and one (1) 40'x100' pad which were completed on 28 October 1967. Drainage in area needs to be improved.

(g) Rehabilitation of QL 15 (LOC), Group Directive 159-151. Project is 90% complete. This project consists of upgrading 2½ miles of road and paving with asphalt to meet MACV Standards.

(h) Heliport Construction, Command Directive 43-214-02-T-6S. The first of three (3) parking aprons including helipads and protective revetments is completed. When completed this project will provide for 77 UH-1 helicopters and 12 CH-47 helicopters. The project is 67% completed.

(i) POL Laboratory, Command Directive 43-216-06-T-6S. Project is 78% complete. Building will be completed upon delivery of critical electrical supplies.

(j) Aviation Support Facilities, Command Directive 43-217-03-T-6S. Project is 45% complete. The project includes the maintenance facilities, storage facilities, and operations facilities for the USARV Heliport at Long Binh.

(k) General Officers Quarters, Command Directive 43-222-01-T-6S(B). Ten (10) of eleven (11) General Officers Quarters for USARV HQ at Long Binh Post are complete. The water distribution system and water borne sewage system are complete. The sidewalks are 70% complete.

(l) Double Surface Treatment of Highway 317, Command Directive 98-201-15-T-MA. Project is 50% complete. The project consists of upgrading 3.5 miles of Highway 317 to MACV Standards and surfacing with a double surface treatment.

(m) Long Binh Post Amphitheater, Command Directive 43-229-01-T-6S. This project consists of constructing a 3,000 seat amphitheater using existing terrain, erection of a 30'x70' stage with canopy, and construction of a 20'x50' wood frame dressing room. Project is 78 percent complete.

(n) Erosion Control USARV HQ, Command Directive 43-254-01-T-MA. This project consists of reshaping the slope north and west of USARV Headquarters to form 100' wide terraces to prevent erosion. Project is 77% complete.

e. With the project currently assigned to this Battalion, the unit will have enough horizontal and vertical construction for full commitment through the month of January 1968.

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

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5. LOGISTICS:

In general, logistical support on construction materials has been good during this reporting period. Support from the 159th Engineer Group in assisting the Battalion has been very satisfactory.

Problems continue in procurement of special items peculiar to the supply system. Requests for special purchases take too long going through channels for approval and subsequent procurement. For example, a sump pump was requested for the Long Binh Dial Central Facility (CD 66-128C-159). This request was sent to 1st Logistical Command by Engineer Command on 20 May 1967. The pump was not received until 9 October 1967 (142 days). This Headquarters submitted a request on 16 September 1967 for explosion proof electrical fans for the Long Binh POL Lab (CD 43-216-06-T-6S). To date, no word has been received on disposition of request. On 20 September 1967, this headquarters requested that electrical distribution panels be purchased from RMK-BRJ for use on the 750 man mess hall at the 93d Evac Hospital (Group Directive 159-78) and for the POL Lab (CD 43-216-06-T-6S). These items were available at the RMK-BRJ Island Depot, Saigon at the time of the request.

A similar problem is anticipated on a recent request for mercury vapor light fixtures and other electrical items for use in the hangers at the USARV Heliport Aviation Support Facilities (CD 43-217-03-T-6S). Much of the delay in construction caused by special procurement could be eliminated if these items were placed on order by the highest Headquarters issuing the construction directive. Although the detailed plans for these facilities may have been developed by the construction unit, the headquarters initiating the directive should be aware of the item which will require special procurement from the nature of the project itself (i.e. mercury vapor lights for hangers, and explosion proof devices for POL Facilities).

Since many of the above named items are not available, a suitable substitute was made to make facilities usable. Assistance was received from Group in designing expedient substitutes.

6. MAINTENANCE:

Continued emphasis on maintenance operations, particulary user/operator preventive services has resulted in a steady decline of deadline rate. Both major item deadline and overall deadline rates have dropped below the 20th Engineer Brigade percentage goals of 10% and 5% respectively. For this reporting period, the following percentages were achieved:

	Major Items	Overall Items
August	6.3%	3.8%
September	7.4%	4.3%
October	5.7%	3.2%

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

10

A marked upswing in deadline rates during late August and September was countered by returning to a system of by-the numbers motor stables for critical items of equipment such as the 5 ton dump truck. The return to this system showed immediate results and the deadline upsurge was swung in the other direction.

Introduction of the weekly equipment usage report by the Group Headquarters has provided a rapid check of how thoroughly periodic lubrications and services are being carried out.

7. FORCE DEVELOPMENT:

In the last QRLL, the 62d Engineer Battalion was in the process of organizing a consolidated electrical team. During this reporting period, the electrical team became operational. It has proven to be very effective. The team supports the Battalion projects and provides wiring support as required on Long Binh Post.

This Battalion has also established a Construction Operations Communications Net. The net is used to increase the construction effort by reporting any changes or requirements that develop. By using radio, the time factor has decreased.

8. COMMAND MANAGEMENT:

An Operations meeting is held daily with the Battalion and Company operations personnel to cover the day's activities, schedule the following day's work, and allocate equipment resources to each company.

Other methods used to present this Battalion's activities are planning and scheduling charts. These charts were developed so that an up to date record can be kept on the status of projects assigned, commitment, availablity of manpower, timely emphasis of effort on projects not on schedule, and future programming of available effort.

Staff meetings of commanders and staff sections are held twice a week to cover all aspects of the Battalion activities.

9. INSPECTOR GENERAL:

The Battalion has an acting Inspector General for the purpose of receiving and processing complaints. One complaint was reported this period.

10. INFORMATION:

Information activities of the Battalion were primarily focused on home town news releases and feature stories of local construction activities. Continuous emphasis was placed on photographic coverage. One feature story per day is submitted to the 159th Engineer Group Public Information Officer (PIO).

SECTION 1, SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES (CONT'D)

11. CIVIC ACTION:

During this period the chaplain distirbuted 90 pounds of used clothing, 20 pounds of soap, and 10 pounds of vitamin tablets to the War Orphans Center, Saigon.

The Battalion worked on the rehabilitation of the Tam Hiep market place road and assistance was given in the Hamlet of Vinh Cuu. This unit has improved the road network and supplied prefabricated structural members to be used in the construction of a warehouse. Technical assistance also was provided to the members of the Hamlet in accomplishment of the construction.

SECTION 2, PART I, OBSERVATIONS (LESSONS LEARNED)

ITEM: Helicopter Revetments:

DISCUSSION: In the process of using 55 gallon drums filled with laterite to construct revetments for helicopters, it was found necessary to tie the second layer of barrels together. This was necessary to prevent the barrels from being knocked over thru carelessness or during a bad storm. To accomplish this task, 1"x6" lumber was banded laterally along the row of barrels at both the top and bottom of the the row. A band is placed in between every other barrel and pulled tight.

OBSERVATION: The use of 1"x6" lumber and 5/8" banding straps provides a rapid means of securing barrels used as helicopter revetments.

ITEM: Use of an Intrencher for Filling Sandbags

DISCUSSION: An intrenching machine can be effectively used to fill sandbags. Each intrenching machine requires four (4) GI's and twenty-five (25) VN for efficient operation. The VN turn the bags and tie the filled bags while the GI's can fill bags from the belt, but rotation is required periodically to maintain maximum efficiency. For maximum effieiency a large flat cleared area is required to minimize relocating the intrenching machine. With this method, up to 4,000 sandbags can be filled by one intrenching machine in one day.

OBSERVATION: The use of an intrenching machine to fill sandbags makes high production possible with minimum manpower requirements.

SECTION 2, PART I, OBSERVATIONS (LESSONS LEARNED) (CONT'D)

ITEM: Fabrication of a Drive Sprocket for 143d CM&P Batch Plant

DISCUSSION: The service section of Company A's 3d shop was required to fabricate a new drive sprocket for the 143d Batch Plant. The sprocket was fabricated from mild steel plates. The center of the sprocket was machined and the teeth outline layed out on the steel plate. Holes were drilled to form the roots of the sprocket teeth. Excess metal was cut away with a cutting torch and the crests of the sprocket teeth finished on a shaper.

OBSERVATION: Such techniques can be applied to sprockets of all sizes.

ITEM: Exterior Doors for General Officers Quarters

DISCUSSION: Glazed doors as designed have been found unsuitable for use because of excessive warping. Solid doors, made by laminating 3/4" plywood, have been substituted effectively.

OBSERVATION: Designs for construction of air-conditioned structures in a tropical climate should take into account the large temperature difference between inside and outside.

ITEM: Stripping mud for Cutting Operation

DISCUSSION: In earthmoving operations, the daily rain this time of year is a continual problem. Even if adequate drainage is provided during construction, the water usually comes in sufficient quantity to thoroughly soak the top 6 to 12 inches of soil. The best way to strip this mud, in order to reach a suitable base from which to begin a cutting operation, is by utilizing the buddy system with dozers. If sufficient dozers are unavailable, the 29CM tractor with pan can be utilized to strip the mud. Although the 29CM will not pick mud efficiently, it will push and pick up enough to obtain an area hard enough to cut.

OBSERVATION: The monsoon rains have caused a definite slowdown in the progress of earthmoving jobs; however, ingenious utilization of machinery can result in progress even in rainy weather.

ITEM: Installing Electric Water Heaters

DISCUSSION: When installing electric water heaters, and using a temperature pressure safety relief valve, it is advisable to extend the outlet of the safety relief valve to the exterior of the structure to protect the interior of the structure from the water when blown under pressure.

OBSERVATION: Careful installation and observation of utilities after installation can prevent after-occupancy difficulities.

SECTION 2, PART II, OBSERVATIONS (LESSONS LEARNED) (CONT'D)

13

ITEM: Access to Underground Valves for Water Lines

DISCUSSION: When placing pipelines for potable water systems, it is necessary to provide access to buried valves. An expedient method of using two concentric culvert sections, one 24 inch and one 18 inch, for exterior and interior forms for concrete cylinders has saved manhours and time.

OBSERVATION: Culvert pipe can be used to make form walls for underground concrete structures.

ITEM: Filling Revetments with Laterite

DISCUSSION: Helicopter protective revetments can be built from inexpensive, light materials. A design using steel U-picket framing and corrugated steel roofing walls has been used. The light construction of these revetments serves to retain the laterite, but when filling with a front loader the impact of the fall might break the welds and cause excessive shock to the structure. A steel hopper mounted on the side of a 5 ton dump truck has been utilized to cushion the revetments. The laterite is dumped into the hopper and then falls freely into the revetments.

OBSERVATION: Repair of revetments damaged during filling has been eliminated by use of a steel hopper to cushion the fall.

ITEM: Proper operation of 290M tractor-scraper combination or tractor

DISCUSSION: Many times through operator carelessness or inexperience, the radiator grills or radiators themselves are damaged because of improper blade level in contact with the push-block. The blade should never be so high that it will lift the rear wheels of the pan off the ground. If this is done, often times the push block will slip over the blade and possible damage will result.

OBSERVATION: Careful attention to the blade level will prevent damage to radiators of 290M tractors.

ITEM: Placing of Drop Inlets During Wet Weather

DISCUSSION: Forming and placing of drop inlets for storm drainage systems in wet weather can be extremely time consuming. Rapid installation of the drainage system is essential once excavation has begun.

OBSERVATION: Corrugated steel culvert placed concentrically (i.e. 24" and 36") is a rapid means of prefabbing the drop inlet and provides additional strength to the structure. Placing the culvert concentrically provides circular, steel forms which are inherently strong. Inlets and outlets are easily cut out with a cutting torch and culvert of the desired size welded in place. The welding of the inlet and outlet culvert in place will also brace the concentric corrugated steel forms and hold them in place during the pouring of the concrete. Additional bracing such as spacing rebar and

welding it in place can be used, but care should be taken not to hinder the placement of concrete. Backfilling can commence quickly without fear of damaging the structure.

ITEM: Use of Concrete for Sub-base Stabilization

DISCUSSION: During the road rehabilitation program on QL 15, several soft areas have been detected in the existing roadway and shoulders. Where the cut was small, the holes were filled with laterite and compacted to form a base for the subsequent asphalt paving operations.

However, some areas were soft to a significant depth and over large areas. The additional use of laterite in these areas did not suitably tighten the soil and give adequate solidification of the soil. Therefore, some other method had to be used.

The solution to this problem proved to be the use of concrete. Each soft area was excavated to an extent which allowed the majority of the spongy material to be removed. At this time, concrete was placed in the cavities. Only a thickness of 12" was placed in order to form a cap, thereby permitting the remaining area to be filled with laterite.

OBSERVATION: Initially, the sub-soil continued settling, but this condition existed for only a short period. As the concrete was placed, the soil appeared to tighten and a condition of soil-concrete equilibrium was attained. The base provided the asphalt pavement by the concrete and laterite has proven more than adequate in each situation. It reduced both manhours and equipment hours, and assisted in expediting project completion.

ITEM: Relocation of Air Conditioner Controls

DISCUSSION: Each of the GOQ units at Long Binh is furnished with three (3) air conditioners. These refrigeration units are of the window-mount variety and all controls are integral with the unit. Because these units were mounted in the cupolas of the GOQ's, manual control of the units was impossible without the use of a step ladder. To provide floor-level control for each of the units, the control lead wires were spliced and extended down the walls, and the control plate and control were mounted in the walls.

OBSERVATION: The air conditioning units are still approximately ten (10) feet above the floor, but now they are easily controlled by hand from the floor level.

ITEM: Use of 3/8"(-) Crushed Rock and Cement for Soil Stabilization

SECTION 2, PART II, OBSERVATIONS (LESSONS LEARNED) (CONT'D)

15

DISCUSSION: During the rehabilitation of QL 15, this unit found it necessary to find an expident method of stabilizing the shoulders and roadway prior to paving. Adverse weather caused the soil to become soft. Since it was time consuming to wait for the laterite to dry out, the use of crushed roack with a layer of cement was placed on the roadway to draw the surface moisture from the soil and permit us to put a prime coat of the roadway prior to paving.

A thin layer of 3/8"(-) crushed rock was spread on the roadway then cement was spread over the crushed rock. This drew the moisture from the soil. A 10 ton roller was then used for compaction.

OBSERVATION: The use of 3/8"(-) crushed rock with a layer of cement proved to be an effective method for drying out and stabilizing the surface of the roadway prior to asphalt paving.

ITEM: Use of Cement-stabilized Select Fill

DISCUSSION: During the rehabilitation of QL 15 this unit was faced with the task of rebuilding and stabilizing the base course of the roadway. Due to adverse weather and heavy traffic on the road, the use of laterite as a subbase was ineffective and time consumming. It was decided to use select fill (70% gravel - 30% laterite) stabilized with cement.

The select fill was dumped from 5 ton dump trucks and spread with a grader. After approximately one hour, a 10 ton roller was used to compact the fill.

OBSERVATION: The use of cement stabilized select fill proved to be a time saver and efficient method of stabilizing roadway and shoulders during the rainy season. Two primary reasons for this were its strength characteristics and its relative invulnerability to adverse weather conditions.

ITEM: Holding and Alignment Clip

DISCUSSION: When faced with the task of placing sheet metal siding on the new heliport hanger on Long Binh Post, D Company, devised a holding clip to insure proper alignment and to speed the placing of over 12,512 square feet of siding. The use of this clip has proven to be an effective time saver. It facilitates the holding and alignment of the corrugated sheeting on the second and third course. When installing the first run of siding after checking alignment, all fasteners are secured except for the top. The clip is then placed in the approximate center on the top of the bottom sheet. Then the second sheet is placed into the clip. This will give the same overlap, assuring alignment. The second sheet is then plumed with level and intermediate fasteners are installed. The second sheet is lifted at the bottom, followed by the removal of the clip. The precess is repeated for the next sheet.

SECTION 2, PART II, OBSERVATIONS (LESSONS LEARNED) (CONT'D)

OBSERVATION: This insure good alignment of wall siding and expedites its installation.

ITEM: Removal of Concrete Beams and Curbs

DISCUSSION: After concrete beams and curbs have been poured into wooden forms and cured, removal can be hindered by the concrete's expansion.

OBSERVATION: In an effort to lessen the possibility of damage to the forms, sheet metal, which has been greased, is nailed to the form. Sheet metal used is flat, 20 ga and zinc coated to prevent rust and oxidation. Removal is thus made easier, the risk of damage to the concrete is reduced, and the life of the wooden form is lenghtened.

ITEM: Steel Form Substitute

DISCUSSION: When there is a shortage of steel forms, wooden forms provide adequate substitute for the construction of concrete pads. The proper method of construction is through the use of 1"x6" for the base and 2"x4" for the side, braced with 2x material. Holes can be drilled into the base and, just as with steel, the wooden form can be secured with 28" reinforcing spikes.

OBSERVATION: Wooden forms, when properly constructed and installed, have proven to be just as effective as steel forms in the placing of concrete pads.

SECTION 2, PART II, RECOMMENDATIONS

The main problem encountered during this reporting period has been the requirement for construction materials not available in the supply system. This has caused delays in the completion of projects.

Engineering designs should incorporate to the maximum extent possible the utilization of materials available in-country. When it is necessary to use materials not available, the headquarters initiating the directive

SECTION 2, PART II, RECOMMENDATIONS (CONT'D)

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should initiate immediate procurement action to obtain these materials in sufficient time to complete projects on schedule.

Robert E. Crowley

ROBERT E. CROWLEY
LTC, CE
Commanding

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19

EGB-3 (31 Oct 67) 1st Ind
SUBJECT: Operational Report-Lessons Learned for Quarterly Period Ending 31 October 1967

DA, HQ, 159th Engineer Group, APO 96491 27 NOV 1967

TO: Commanding General, 20th Engineer Brigade, APO 96491

1. Forwarded for your acceptance.

2. This headquarters concurs with the recommendations in the basic correspondence.

FOR THE COMMANDER:

J. R. BUNTYN, JR.
Major, AGC
Adjutant

16

20

AVBI-OPN (31 Oct 67) 2nd Ind
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

DA, Headquarters, 20th Engineer Brigade, APO 96491, 27 Nov 67

TO: Commanding General, USAECV(P), Attn: AVCC-P&O, APO 96491

1. The subject report submitted by the 62nd Engineer Battalion has been reviewed by this Headquarters and is considered comprehensive and of value for documentation and review of the reporting units activities and experiences.

2. This Headquarters concurs with the submitted report, with the following comments:

SECTION 2, PART I

Installing Electric Water Heaters (Pg 10)

Many components of an end product have individual safety devices. The idea of integrated system design should be stressed in technical manuals. In this case, a means of minimizing damage to a facility by the safety device of a component is presented.

Placing of Drop Inlets During Wet Weather (Pg 11)

Concentric corrugated metal pipe forms can be used for a variety of purposes providing the end product is worth the expense, strength or time savings. This technique should be added to the inventory of construction methods for lining underground openings.

Use of Concrete for Sub-base Stabilization (Pg 12)

A combination of flexible and rigid pavement design has become a popular technique of construction in country to provide support over areas of low strengths. Portland cement has been used to lower moisture contents of soils by hydration and provide the additional support of some cementation. The cured soil cement has provided good subgrade and base courses (strength and resistance to moisture).

AVBI-OPN
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

27 November 1967

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SECTION 2, PART II

The problem is that in design, availability of materials, and short lead times continues to hinder programmed construction. A general review and updating of design manual by qualified personnel is in order with concurrent introduction of new materials into the supply system. Design agencies must keep the customers' requirements and availability of supplies in mind. On the other hand, the designer should have a degree of latitude in view of technological advances in various engineering fields. Design agencies must coordinate with logistic agencies for desired additions to authorized stockage lists.

FOR THE COMMANDER:

CECIL D. CLARK
Major, CE
Adjutant

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CO, 62nd Engr Bn

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AVCC-P&O (31 Oct 67) 3rd Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

HEADQUARTERS, UNITED STATES ARMY ENGINEER COMMAND
VIETNAM, (PROV), APO 96491
8 DEC 1967

TO: Commanding General, United States Army Vietnam, ATTN: AVHCC-DH, APO 96375

The subject report, submitted by the 62nd Engineer Battalion has been reviewed by this headquarters and is considered adequate.

FOR THE COMMANDER:

PAUL A. LOOP
Colonel, CE
Chief of Staff

Cys Furn:
CG, 20th Engr Bde
CO, 159th Engr Gp
CO, 62nd Engr Bn

"THIS MARKING IS CANCELLED WHEN SEPARATED FROM MATERIAL BEARING THE PROTECTIVE MARKING"

AHGC-DST (31 Oct 67) 4th Ind
SUBJECT: Operational Report-Lesson Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

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HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 18 DEC 1967

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1967 from Headquarters, 62d Engineer Battalion (CWXA) as indorsed.

2. Concur with report as indorsed. Report is considered adequate.

FOR THE COMMANDER:

JOHN V. GETCHELL
Captain, AGC
Assistant Adjutant General

cc:
HQ, 62d Engr Bn
HQ, USAECV (P)

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GPOP-DT (31 Oct 67) 5th Ind
SUBJECT: Operational Report for the Quarterly Period Ending 31 October 1967 from HQ, 62d Engineer Battalion (UIC: CWXA) (RCSCSFOR-65)

HQ, US ARMY, PACIFIC, APO San Francisco 96558 12 JAN 1968

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

HEAVRIN SNYDER
CPT, AGC
Asst AG

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